SHEET <u>1</u> OF <u>13</u>

**INFORMATION DISCLOSURE** STATEMENT BY APPLICANT

ATTY. DOCKET NO. 061282-0234

SERIAL NO. 10/574,863

**APPLICANT** 

Yuichiro SASAKI, et al.

(Substitute for form 1449/PTO)

FILING DATE April 06, 2006 GROUP 2823

| EXAMINER'S<br>INITIALS                | CITE<br>NO.                                      |   | Document Number<br>nber-Kind Code2 (if known)   | Publication Date<br>MM-DD-YYYY   | Name of Patentee or Applicant<br>Document   | of Cited   |   |  | Lines, Where<br>es or Relevant<br>Appear |
|---------------------------------------|--|---|---|--|---|--|---|--|--|
|                                       |  | us  | 5,561,072   | 10-01-1996   | SAITO   |  |   |  | <del></del>                              |
| · · · · · · · · · · · · · · · · · · · | <del>                                     </del> | us  | 6,465,727 B2  | 10-15-2002   | MARUYAMA et al.   |  |   |  |  |
|                                       | 1  | us  | 6,653,699   | 11-2003  | YANG, JEONG-HWAN  |  |   |  |  |
|                                       |  | US  | 2005/0227463  | 10-2005  | ITO et al.  | ···  |   |  |  |
|                                       |  | US  | 6,713,819 B1  | 03/30/2004   | En et al.   |  |   |  |  |
|                                       |  |   |   | FOREIGN PAT  | ENT DOCUMENTS   |  |   |  |  |
| EXAMINER'S<br>INITIALS                | CITE<br>NO.                                      | 1   | eign Patent Document<br>htry Codes -Number 4 -Kind<br>Codes ( <i>if known</i> )   | Publication Date MM-DD-YYYY  | Name of Patentee or Applicant of<br>Cited Document  | Pages, Col<br>Lines Wi<br>Relevant F<br>Appea  | here<br>igures  | Tr<br>Yes  | anslation<br>No                          |
|                                       |  | 1   | JP 9-199719   | 07-31-1997   | TOSHIBA CORP  |  |   |  |  |
|                                       | 1  |   | JP 5-206045   | 08-13-1993   | HITACHI LTD   |  |   |  |  |
|                                       | 1  |   | JP 58-97863   | 06-10-1983   | TOSHIBA CORP  |  |   |  |  |
|                                       |  |   | WO 98/34268   | 08-06-1998   | ULTRATECH STEPPER<br>INC  |  |   |  |  |
|                                       | <del> </del>                                     | 1   |   | 44.04.4004   | E1117011170   |  |   |  |  |
|                                       |  | 1   | JP 6-310533   | 11-04-1994   | FUJITSU LTD   |  | i i   |  | İ  |
|                                       |  | <u> </u>  | OTHER A   | RT (Including Author   | , Title, Date, Pertinent Pages, Etc.)   |  | <u> </u>  |  |  |
| EXAMINER'S<br>INITIALS                | CITE<br>NO.                                      |   | OTHER A<br>le name of the author (in<br>al, serial, symposium, cat  | RT (Including Author<br>CAPITAL LETTERS)   |   |  |   |  | e,                                       |
|                                       |  | journa<br>publis  | OTHER A le name of the author (in al, serial, symposium, catalhed.  | RT (Including Author<br>CAPITAL LETTERS)<br>alog, etc.), date, page  | , Title, Date, Pertinent Pages, Etc.) , title of the article (when appropriate  | her, city and/   | or countr   | y where  |  |
|                                       |  | journa<br>publis<br>Inter                                       | OTHER A le name of the author (in al, serial, symposium, cat- hed.  mational Search Rep . Lenoble et al., "Rel  | RT (Including Author<br>CAPITAL LETTERS)<br>alog, etc.), date, page<br>ort correspondin<br>iable and enhanc  | , Title, Date, Pertinent Pages, Etc.)<br>h, title of the article (when appropriate<br>e(s), volume-issue number(s), publis  | 004/001473   | dated A   | y where<br>April 13, 2<br>ped by lov   | 004                                      |
|                                       |  | journa<br>publis<br>Inter<br>D<br>bias                          | OTHER A le name of the author (in al, serial, symposium, cat- hed.  rnational Search Rep Lenoble et al., "Rel sed Plasma Doping",   | RT (Including Author CAPITAL LETTERS) alog, etc.), date, page ort correspondin iable and enhanc 2000 Symposiun tion Doping using   | Title, Date, Pertinent Pages, Etc.)   | her, city and/<br>004/001473<br>im pMOSFE<br>of Technic  | dated A<br>ETs dop<br>al Pape   | April 13, 2<br>ped by low<br>rs, IEEE,   | 004<br>v<br>pp.                          |
|                                       |  | journa publis Inter D bias Y. K                                 | OTHER A le name of the author (in al, serial, symposium, cat- hed.  mational Search Rep Lenoble et al., "Rel sed Plasma Doping", iyota, "Surface Reac iyota, et al., "Role of ctroscopy and Fourie  | RT (Including Author CAPITAL LETTERS) alog, etc.), date, page oort correspondin iable and enhanc 2000 Symposiun tion Doping using Ap hydrogen during er-transform infra and Technolog  | r, Title, Date, Pertinent Pages, Etc.)  the of the article (when appropriate e(s), volume-issue number(s), publising to application no. PCT/JP20 and performances of sub-0.1 μ n on VLSI Technology Digest 110-1111, 2000.  The Gas Source for Ultra Shallow oplied Physics, 2000.  The propriate representation of the performance of the perf | her, city and/<br>004/001473<br>Im pMOSFE<br>of Technic<br>w Junction<br>nalyzed by<br>n", Journal<br>998.   | dated A<br>ETs dop<br>al Pape<br>s", Japa<br>x-ray pl<br>of Vacu      | y where April 13, 2 ped by low rs, IEEE, an Society hotoelecte uum Scien                   | 004<br>v<br>pp.<br>y of                  |
|                                       |  | journa publis Inter D bias Y. K                                 | OTHER A le name of the author (in al, serial, symposium, cat- hed.  mational Search Rep Lenoble et al., "Rel sed Plasma Doping", iyota, "Surface Reac iyota, et al., "Role of ctroscopy and Fourie  | RT (Including Author CAPITAL LETTERS) alog, etc.), date, page ort correspondin iable and enhanc 2000 Symposium tion Doping using Ap hydrogen during er-transform infra and Technolog Reaction Doping   | Title, Date, Pertinent Pages, Etc.)  In title of the article (when appropriate e(s), volume-issue number(s), publis art to application no. PCT/JP20 and performances of sub-0.1 µm on VLSI Technology Digest 110-1111, 2000.  In Gas Source for Ultra Shallow policy Physics, 2000.  In rapid vapor-phase doping an ared-attenuated total reflection  | one, city and/<br>004/001473<br>im pMOSFE<br>of Technic<br>w Junction<br>nalyzed by<br>n", Journal<br>1998.  | dated A<br>ETs dop<br>al Pape<br>s", Japa<br>x-ray pl<br>of Vacu      | y where April 13, 2 ped by low rs, IEEE, an Society hotoelecte uum Scien                   | 004<br>v<br>pp.<br>y of                  |
|                                       |  | journa<br>publisi<br>Inter<br>D<br>bias<br>Y. K<br>Y. K<br>spec | OTHER A le name of the author (in al, serial, symposium, cat- thed.  Thational Search Rep Lenoble et al., "Rel sed Plasma Doping", iyota, "Surface Reac iyota, et al., "Role of ctroscopy and Fourie Y. Kiyota, "Surface . Sasaki et al., "Gas  | RT (Including Author CAPITAL LETTERS) alog, etc.), date, page ort correspondin iable and enhanc 2000 Symposium tion Doping using frydrogen during er-transform infra and Technolog Reaction Doping Technolog Phase Doping at Workshop on Justine   | Title, Date, Pertinent Pages, Etc.)  In title of the article (when appropriate e(s), volume-issue number(s), publis ag to application no. PCT/JP20 and performances of sub-0.1 μ n on VLSI Technology Digest 110-1111, 2000.  In g Gas Source for Ultra Shallow public Physics, 2000.  In a rapid vapor-phase doping an ared-attenuated total reflection gy A 16 (1), pp. 1-5, Jan/Feb 19 using Gas Source for Ultra Sy No. 39, pp. 9-11, June 2002.  Room Temperature", Extendenction Technology, pp. 39-40,   | one of Technic w Junction alyzed by 1", Journal 1998. The latest and the latest a | dated A ETs dop al Pape s", Japa x-ray pl of Vacu nction",            | y where April 13, 2 ped by low rs, IEEE, an Society hotoelecte uum Sciel Silicon ernationa | 004 v pp. y of ron nce                   |
|                                       |  | journa<br>publisi<br>Inter<br>D<br>bias<br>Y. K<br>Y. K<br>spec | OTHER A le name of the author (in al, serial, symposium, catched.  Inational Search Rep Lenoble et al., "Rel sed Plasma Doping", iyota, "Surface Reac iyota, et al., "Role of ctroscopy and Fourie Y. Kiyota, "Surface . Sasaki et al., "Gas Gasaki et al., "B <sub>2</sub> H <sub>6</sub> Pl | RT (Including Author CAPITAL LETTERS) alog, etc.), date, page ort correspondin iable and enhanc 2000 Symposium tion Doping using thydrogen during er-transform infra and Technolog Reaction Doping Technolog Phase Doping at Workshop on Jud asma Doping with                                  | r, Title, Date, Pertinent Pages, Etc.)  the title of the article (when appropriate e(s), volume-issue number(s), publis ag to application no. PCT/JP20 and performances of sub-0.1 µm on VLSI Technology Digest 110-1111, 2000.  The graph of the article (when appropriate applied Physics, 2000.  The article article (sub-0.1) are districted and performance for Ultra Shallow applied Physics, 2000.  The article article (sub-0.1) are districted at the public applied Physics, 2000.  The article article (sub-0.1) are districted at the performance for Ultra State (sub-0.1) are districted at the performance for | one of Technic w Junction alyzed by 1", Journal 1998. hallow Jured Abstract 2002.  | dated A ETs dop al Pape s", Japa x-ray pl of Vacu nction",            | y where April 13, 2 ped by low rs, IEEE, an Society hotoelecte uum Sciel Silicon ernationa | 004 v pp. y of ron nce                   |
|                                       |  | journapublis Inter Dias Y. K Y. K spec                          | OTHER A le name of the author (in al, serial, symposium, catched.  rnational Search Rep Lenoble et al., "Rel sed Plasma Doping", iyota, "Surface Reac iyota, et al., "Role of ctroscopy and Fourie Y. Kiyota, "Surface Lenoble et al., "Gas Gasaki et al., "BaHaPl                            | RT (Including Author CAPITAL LETTERS) alog, etc.), date, page ort correspondin iable and enhanc 2000 Symposium tion Doping using thydrogen during er-transform infra and Technolog Reaction Doping Technolog Phase Doping at Workshop on Jui asma Doping witl Technology Dige ssued in corresp | Title, Date, Pertinent Pages, Etc.)  Title, Date, Pertinent Pages, Etc.)  Title of the article (when appropriate e(s), volume-issue number(s), publis and the performances of sub-0.1 μ on VLSI Technology Digest 110-1111, 2000.  To Gas Source for Ultra Shallow policy Physics, 2000.  To papid vapor-phase doping and the performance dotal reflection and the performance of Ultra Sy A 16 (1), pp. 1-5, Jan/Feb 19 using Gas Source for Ultra Sy No. 39, pp. 9-11, June 2002.  Room Temperature", Extendenction Technology, pp. 39-40, h "In-situ He Pre-amorphization of the performance of the | nher, city and/<br>004/001473<br>Im pMOSFE<br>of Technic<br>w Junction<br>nalyzed by<br>n", Journal<br>998.<br>hallow Jur<br>ed Abstract<br>2002.<br>pn", 2004 S<br>00-181.  | dated A ETs dop al Pape s", Japa x-ray pl of Vacu nction", ts of Inte | April 13, 2 ped by low rs, IEEE, an Society hotoelecti uum Scier Silicon ernationa         | 004 v ppp. y of ron nce                  |

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

1 Applicant's unique citation designation number (optional). 2 Applicant is to place a check mark here if English language Translation is attached.

WDC99 1538509-1.061282.0234

|                        | INFORMATION DISCLOSURE STATEMENT BY APPLICANT |            |  |  | ATTY. DOCKET<br>061282-023                                  |  |                           | IAL NO<br><b>574,8</b>     |                        |   |
|------------------------|---|------------|--|--|---|--|---------------------------|----------------------------|------------------------|---|
|                        |   |            |  |  | APPLICANT Yuichiro SA                                       | ASAKI, e                               | t al.                     |                            |                        |   |
|                        | (Subs   | stitute    | for form 1449/PTO)   |  | FILING DATE April 06, 20                                    |  | GRC<br><b>282</b>         |                            |                        |   |
|                        |   |            | U  | .S. PATEN                              | T DOCUMENT  | CS                                     |                           |                            |                        |   |
| EXAMINER'S<br>INITIALS | CITE<br>NO.                                   | Nu         | Document Number mber-Kind Code2 (at known)                       | Publication Dat<br>MM-DD-YYYY          |   | or Applicant of (<br>ument             | Cited                     |                            |                        | Lines, Where<br>es or Relevant<br>ppear |
|                        |   | ÜS         | 2006/0205192   | 09/2006                                | Walth   | er et al.                              |                           |                            | ,                      |   |
|                        |   | US         | 5,969,398  | 10/1999                                |   | akami                                  |                           |                            |                        |   |
|                        |   | US         | 6,051,482  | 04/2000                                |   | ang                                    |                           |                            |                        |   |
|                        |   | US         | 5,897,346  | 04/1999                                | t amagi   | uchi et al.                            |                           |                            |                        |   |
|                        | <b></b>                                       | US         |  | <u></u>                                | _   |  |                           |                            |                        |   |
|                        | <u> </u>                                      | υs         |  | · · · · · · · · · · · · · · · · · · ·  |   |  |                           |                            |                        |   |
|                        |   | υs         |  |  |   |  |                           |                            |                        |   |
|                        |   | US         |  |  |   |  |                           |                            |                        |   |
|                        |   | US         |  |  |   |  |                           |                            |                        |   |
|                        |   | US         |  |  |   |  |                           |                            |                        |   |
|                        |   | US         |  |  |   |  | -                         |                            |                        |   |
|                        |   | US         |  |  |   |  |                           |                            |                        |   |
|                        | I   |            |  | FOREIGN PA                             | ATENT DOCUMENTS   |  |                           |                            |                        |   |
| EXAMINER'S             | I   |            | reign Patent Document  | Publication Date                       |   | or Pages                               | , Column                  | s, Lines                   | Tr                     | anslation                               |
| INITIALS               | CITE<br>NO.                                   | Cou        | intry Codes-Number 4 -Kind<br>Codes (if known)                   | MM-DD-YYYY                             | Applicant of Cited Doc                                      |  | nere Rele<br>gures Ap     |                            | Yes                    | No                                      |
|                        | <u> </u>                                      | -          | JP 9-17867   | 01/17/1997                             | NKK Corp.   |  |                           |                            |                        | X                                       |
|                        | <del> </del>                                  |            |  |  |   |  |                           |                            |                        |   |
|                        | <b>-</b>                                      | $\vdash$   |  |  |   |  |                           |                            |                        |   |
|                        |   |            |  |  |   |  |                           |                            |                        |   |
|                        |   |            |  |  |   |  |                           |                            |                        | -                                       |
| EVANA                  |   |            |  |  | or, Title, Date, Pertinent P                                |  |                           |                            |                        |   |
| EXAMINER'S<br>INITIALS | CITE<br>NO.                                   | journ      | de name of the author (in one all, serial, symposium, cata shed. | CAPITAL LETTER<br>alog, etc.), date, p | S), title of the article (whei<br>age(s), volume-issue numb | n appropriate), t<br>per(s), publisher | itle of the<br>, city and | e item (boo<br>l/or countr | ok, magazin<br>y where | e,  <br>                                |
|                        |   |            | <u>.</u>   |  | nt Application Serial No. 1                                 |  |                           |                            |                        |   |
|                        |   | ļ <u>.</u> | O T -4-1 1   |  | nt Application Serial No. 1                                 |  | -                         | 1                          |                        |   |
|                        |   | "          | O, T., et al., "Improvemen<br>20                                 | t of Threshold Vol<br>203, Symposium o | age Roll-off by Ultra-shalk<br>n VLSI Technology Digest     | of Technical Pa                        | med by F<br>apers.        | iash Lam                   | p Annealing            | ,                                       |
|                        | L   | <u> </u>   |  |  |   |  |                           |                            |                        |   |
|                        |   | EX         | AMINER   |  |   | DATE C                                 | CONSIDE                   | RED                        |                        |   |

<sup>\*</sup>EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

1 Applicant's unique citation designation number (optional). 2 Applicant is to place a check mark here if English language Translation is attached.

|                        |             | TION DISCLOSI                                  |  | ATTY. DOCKET NO. 061282-0234  | 1             | ial No. 10/574,86   | 33  |
|------------------------|-------------|--|--|---|---------------|---|-----|
|                        |             |  |  | APPLICANT Yuichiro SASAKI, et   | al.           | **************************************                          | TV. |
|                        | (Subs       | stitute for form 1449/PTO)                     |  | FILING DATE April 6, 2006   | GR0<br>282    |   |     |
|                        |             | U  | S. PATENT                                | DOCUMENTS   | _             | •   |     |
| EXAMINER'S<br>INITIALS | CITE<br>NO. | Document Number<br>Number-Kind Code2 (# known) | Publication Date<br>MM-DD-YYYY           | Name of Patentee or Applicant of C<br>Document  | Cited         | Pages, Columns, Lines, \ Relevant Passages or Re Figures Appear |     |
|                        | L           | US   |  |   |               |   |     |
|                        |             |  |  | , Title, Date, Pertinent Pages, Etc.)   |               |   |     |
| EXAMINER'S<br>INITIALS | CITE<br>NO. |  |  | , title of the article (when appropriate), ti<br>e(s), volume-issue number(s), publisher, |               |   |     |
|                        |             | YAMASHITA, F., et al., "Di                     | rect Joule Heating c                     | of Nd-Fe-B Based Melt-Spun Powder   | and Zin       | c Binder", 1999, IEEE.  |     |
|                        |             | CHU, P.K., et al., "Part of                    |  | Doping: Progress and potential", SOI<br>), pages 55-60, www.solid-state.com.              | ID STA        | ATE TECHNOLOGY,   |     |
|                        |             | CHU, P.K., et al., "Part two o                 |  | ng: Progress and potential", SOLID Ses 77-82, www.solid-state.com.                        | TATE          | TECHNOLOGY, October   |     |
|                        |             |  | 199                                      | vard 50 nm Region – Performance and<br>99, pages 641-644, IEEE.                           |               |   |     |
|                        |             |  |  | and depth profile in BF₃ plasma dopir<br>ages 146-150, vol. 136, Elsevler Scien           |               |   | (   |
|                        |             |  |  | aped Bonded Magnets for Small DC<br>hes", J. MGN. SOC. JAPAN, 2001, pag                   |               |   |     |
|                        |             |  |  | Rotor Composed of a Highly Dense Ri<br>MAGN. SOC. JAPAN., 2002, pages 111                 |               |   |     |
|                        |             |  | Ultimate                                 | 50NM CMOS – The role of Plasma Do<br>e Junction Technologies Inc.                         | • •           | •   |     |
|                        |             | SASAKI, Y., et al., " B₂H6 Pla                 | isma Doping with In<br>DIGEST OF TECHNIC | n-situ He Pre-amorphization"", SYMP<br>CAL PAPERS, 2004, pages 180-181, IB                | OSIUM<br>EEE. | ON VLSI TECHNOLOGY  |     |
|                        |             |  | 2004, p                                  | ction Formation", MATSUSHITA TEC<br>ages 404-409, Vol. 50 No. 6.                          |               | ·   |     |
|                        |             | Process in Plasma Doping                       | ", THE JAPAN SOCI                        | al B₂H₀ Gas Phase on Plasma Pretrea<br>ETY OF APPLIED PHYSICS, 2005, pa                   | ges 390       | 03-0907, Vol. 44 No. 6A.  |     |
|                        |             | Hole", JOURNAL OF                              | THE PHYSICAL SO                          | highly-Excited Self-Trapped Exciton a<br>CIETY OF JAPAN, June 1983, pages                 | 1901-19       | 03, Vol. 52 No. 6.  |     |
|                        |             | Formation", JOURNAL OF                         | THE PHYSICAL SO                          | otion of Self-Trapped Excitons in RbC<br>CIETY OF JAPAN, September 1986, p                | ages 32       | 258-3271, Vol. 55 No. 9.  |     |
|                        |             | Implantation", pages                           | 637-640, Semicondu                       | xygen Removal from Silicon-Overlaye<br>uctor Research Center, Matsushita El               | ectric li     | ndustrial Co., Ltd.   |     |
|                        |             |  |  | onance Studies of Defects in Oxygen<br>SICS, July 1987, pages L1116-L1118, '              |               |   |     |
|                        |             | EXAMINER                                       |  | DATE C  | ONSID         | ERED  |     |

<sup>\*</sup>EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

1 Applicant's unique citation designation number (optional). 2 Applicant is to place a check mark here if English language Translation is attached.

|                        |             | TION DISCLO   |   | ATTY. DOCKET NO.<br>061282-0234  |                                | ial No. 10/574,8   | 63       |
|------------------------|-------------|---|---|--|--------------------------------|--|----------|
|                        |             |   |   | APPLICANT Yuichiro SASAKI,   | et al.                         |  |          |
|                        | (Sub        | stitute for form 1449/PT  | O)  | FILING DATE April 6, 2006  | GR0                            |  |          |
|                        |             |   | U.S. PATENT   | DOCUMENTS  |                                |  |          |
| EXAMINER'S<br>INITIALS | CITE<br>NO. | Document Number Number-Kind Code2 (# #                              | 144 DD 1000/  | Name of Patentee or Applicant of Document  | f Cited                        | Pages, Columns, Lines,<br>Relevant Passages or R<br>Figures Appear | televant |
|                        |             | us  |   |  |                                |  |          |
|                        |             |   |   | r, Title, Date, Pertinent Pages, Etc.)   | 5                              |  |          |
| EXAMINER'S<br>INITIALS | CITE<br>NO. | Include name of the auth<br>journal, serial, symposiu<br>published. | nor (in CAPITAL LETTERS<br>m, catalog, etc.), date, pag | ), title of the article (when appropriate)<br>le(s), volume-issue number(s), publish                 | , title of the<br>er, city and | e item (book, magazine,<br>d/or country where                      |          |
|                        |             | MIZUNO, B., et al., "   |   | gen from Si layer on burned oxide b<br>mber 1987, pages 2566-2568, Vol. 6                            |                                | ation of hydrogen", J.   |          |
|                        |             |   |   | r subhalf micron trench sidewalls b<br>vember 1988, pages 2059-2061, Vol.<br>Physics.                |                                |  |          |
|                        |             |   |   | econdary Defects in MeV ion Impalt<br>RENCE ON SOLID STATE DEVICES<br>pages 177-180.                 |                                |  |          |
|                        |             | HORI, A., et al., "A 0.0  |   | hallow Source/Drain Junctions Fab<br>I Annealing", 1994, pages 485-488, l                            |                                | 5KeV Ion Implantation  |          |
|                        |             |   | µm MOS Devices-", TEC                                   | ics of a Room Temeprature 0.05 µm:<br>HNICAL REPORT OF IEICE, 1995, p<br>MATION AND COMMUNICATION EN | ages 41-4                      | 6, THE INSTITUTE OF  |          |
|                        |             | MIZUNO, B., et al. " P  |   | ', SURFACE AND COATINGS TECH<br>5, Elsevier Science S.A.   | NOLOGY,                        | 1996, pages 51-55, Vol.  |          |
|                        |             | MIZUNO, B., et al., "F<br>SYMPOSIUM ON V                            | lasma Doping of Boron (<br>LSI TECHNOLOGY DIGE          | for Fabricating the Surface Channel<br>ST OF TECHNICAL DIGEST OF TEC                                 | Sub-quar<br>HNICAL I           | ter micron PMOSFET",<br>PAPERS, 1996, IEEE.                        |          |
|                        |             | TAKASE, M., et al., processes", NUCLE                               | "An evaluation method for<br>AR INSTRUMENTS AND         | or a high concentration profile prod<br>METHODS IN PHYSICS RESEARCH<br>Elsevier Science B.V.         | uced in ve<br>, 1997, pa       | ery low energy doping<br>iges 288-290, Vol. 121,                   |          |
|                        |             |   |   | ition Induced Oxide Charging by Uti<br>March 1997, pages 1618-1621, Vol.                             |                                |  | ·        |
|                        |             | MIZUNO. B., et al., "Pla  | isma Doping", pages 165                                 | -170, Central Research Laboratory,<br>Ltd.   | Matsushi                       | ta Electric Industrial Co.,  |          |
|                        |             |   |   | n Of At-Cut Quartz Resonators by th<br>CTRONIC PACKAGING, 1997, pages                                |                                |  |          |
|                        |             | MIZUNO. B., et al., "F  |   | na-Less Doping of Semiconductor",<br>Vol. 438, MATERIALS RESEARCH S                                  |                                | S. SOC. SYMP. PROC.,   |          |
|                        |             |   |   | asma Doping – for Next Generation<br>ce contamination issues -", 1997, pa                            |                                |  |          |
|                        |             | TAKASE, M., et al., "Sh   |   | nsions for pMOSFETs with High Ac<br>a Doping", IEDM, 1997, pages 475-4                               |                                | nd Low Process Damage  |          |
|                        |             |   |   | oscopy (HX-PES) study on chemical cation of advanced ULSI devices",                                  |                                |  |          |
|                        |             | EXAMINER  |   | DATE   | CONSIDI                        | ERED   |          |

<sup>\*</sup>EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

1 Applicant's unique citation designation number (optional). 2 Applicant is to place a check mark here if English language Translation is attached.

|                        |             | TION DISCLOSENT BY APPLIC                                |  | ATTY. DOCKET NO. <b>061282-0234</b>   |                       | IAL NO.<br>rial No. 10/574,8                                       | 63 |
|------------------------|-------------|--|--|---|-----------------------|--|----|
|                        |             |  |  | APPLICANT Yuichiro SASAKI, e  | t al.                 |  |    |
|                        | (Sub        | stitute for form 1449/PTO)                               |  | FILING DATE April 6, 2006   | GRC<br>282            |  |    |
|                        |             |  | U.S. PATEN                                 | T DOCUMENTS   | 322                   |  |    |
| EXAMINER'S<br>INITIALS | CITE<br>NO. | Document Number Number-Kind Code2 (at known              | Publication Date<br>MM-DD-YYYY             |   | Cited                 | Pages, Columns, Lines,<br>Relevant Passages or R<br>Figures Appear |    |
|                        |             | US   |  |   |                       |  |    |
| EVAMINEDIC             |             |  |  | or, Title, Date, Pertinent Pages, Etc.)   | P41 6 4 b             | - '4 '61' T  |    |
| EXAMINER'S<br>INITIALS | CITE<br>NO. |  |  | <ul><li>S), title of the article (when appropriate),<br/>ige(s), volume-issue number(s), publisher</li></ul>            |                       |  |    |
|                        |             | Formation", 13TH IEEE in                                 | ternational Conferer                       | Subsequent Rapld Thermal Processing<br>nce on Advanced Thermal Processing<br>IEEE                                       | of Semi               |  |    |
|                        |             |  |  | Piasma Doping", 2004, pages 423-427   | -                     |  |    |
|                        |             | SASAKI, Y., et al., "Gas<br>Junct                        | Phase Doping at Ro<br>Ion Technology, 200  | oom Temperature", Extended Abstract<br>02, pages 39-40, Japan Society of Appl   | of Interried Phys     | national Workshop on slcs.   |    |
|                        |             |  |  | Doping System", Extended Abstract o<br>2, pages 37-38, Japan Society of Appl  |                       |  |    |
|                        |             | JIN, C.G., et al., "Esti                                 | mation of Ultra-Shal<br>Spectroscopic Elli | low Plasma Doping (PD) Layer's Optic<br>psometry (SE)", 2004, Pages 102-103,  | al Absor<br>IEEE.     | rption Properties by   |    |
|                        |             | SHIMIZU, N., et al., "Secon<br>22nd (1990 Internation    | ndary Defect Reduct<br>onal) Conference or | ion by Multiple MeV Boron Ion Implant<br>a solid State Devices and Materials, Se  | ation", E<br>ndai, 19 | Extended Abstract of the 90, pages 449-452.                        |    |
|                        |             |  |  | ping with in-situ Helium pre-amorphiz<br>search B 237, 2005, pages 41-45, ELSE  |                       |  |    |
|                        |             | JIN, C.G., "Ultra shallow p<br>(ASLA) with selective abs | orption modulation                         | on by plasma doping (PD) and long pul<br>", Nuclear instruments and Methods in<br>ages 58-61, ELSEVIER B.V.             | se all so<br>Physics  | olid-state laser annealing<br>s Research B 237, 2005,              |    |
|                        |             |  | Solid Plasma Source                        | ma-Less Doping for SI: Application to<br>a Application for Safety Operation", Se<br>whita Electric Industrial Co., Ltd. |                       |  |    |
|                        |             |  |  | rce Implantation Method for Ultra-Sha<br>sma-Aided Manufacturing, University  |                       |  |    |
|                        |             |  |  | Wall of a Sub-0.5 μm Width Trench", Ε<br>Devices and Materials, Tokyo, 1987, pa   |                       |  |    |
|                        | ,           | MIZUNO, B., "  | Plasma Doping Tect                         | nnology", Applied Physics, 2001, page   | s 1458-1              | 462, Vol. 70.  |    |
|                        |             | Fabricated by Plasma Do                                  | ping", TECHNICAL<br>C                      | ensions for pMOSFETs with High Activ<br>REPORT OF IEICE, 1998, The institute<br>ommunication Engineers.                 | of Electi             | ronics, Information and  |    |
|                        |             |  |  | asma Doping", Special Issue – Current<br>Technology-1.  |                       |  |    |
|                        |             | MIZUNO, B., et al., "Pla                                 |  | antation – Piasma Doping", High Temp<br>, pages 114-120, Vol. 3 No. 22.   | erature               | Science Journal, May   |    |
|                        |             | EXAMINER   |  | DATE (  | CONSIDE               | ERED   |    |

<sup>\*</sup>EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

1 Applicant's unique citation designation number (optional). 2 Applicant is to place a check mark here if English language Translation is attached.

|                        |             |   |  |   |   | BITELET O OT 1  |
|------------------------|-------------|---|--|---|---|---|
|                        |             | TION DISCLOS                                      |  | ATTY. DOCKET NO. <b>061282-0234</b>   | SERIAL NO. Serial No.                     | o. 10/574,863   |
|                        |             |   |  | APPLICANT Yuichiro SASAKI, e  | t al.                                     |   |
| Ĭ.                     | (Sub:       | stitute for form 1449/PTO)                        |  | FILING DATE April 6, 2006   | GROUP <b>2823</b>                         |   |
|                        |             | U   | S. PATEN                               | T DOCUMENTS   |   |   |
| EXAMINER'S<br>INITIALS | CITE<br>NO. | Document Number<br>Number-Kind Code2 (If known)   | Publication Date<br>MM-DD-YYYY         | Name of Patentee or Applicant of 6  |   | , Columns, Lines, Where<br>ant Passages or Relevant<br>Figures Appear |
|                        |             | US  |  |   |   | <del></del>   |
|                        |             |   |  | or, Title, Date, Pertinent Pages, Etc.)   |   |   |
| EXAMINER'S<br>INITIALS | CITE<br>NO. |   |  | S), title of the article (when appropriate), t<br>ge(s), volume-issue number(s), publisher        |   |   |
|                        |             |   | Silicon Systems                        | on Technology using Fluorinated Amo<br>Research Laboratories, NEC Corporati                       | on.                                       |   |
|                        |             | MIZUNO. B., et al., "Plasma                       | doping for fabrica                     | ting ultra shallow junction, 3p-ZX-4, Ma<br>Ltd.  | atsushita Electric I                      | Industrial Co.,   |
|                        |             | ODA, H., et al., "Demand fo<br>Series – Lecture M | or Junction Techn<br>lanuscripts, Comp | ology in CMOS Transistors", 27a-ZL-1<br>orehensive Lectures within the Area, 2                    | , 49th Applied Phys<br>002, Tokai Univers | sics Lecture<br>sity.   |
|                        |             |   |  | Status Quo and Perspectives", 27a-Zi<br>within the Area.  |   |   |
|                        |             | Suppression", 26p-M-19,                           | 63rd Applied Phys                      | Dielectrics by Z-ray Scattering- Anisot<br>sics Lecture Series – Lecture Manuscri                 | pts, 2002, Niigaka                        | University.   |
|                        |             |   |  | thin low-k film during anneal – Ex-situ<br>M-20.  |   |   |
|                        | ļ           |   | •                                      | Current Monitor for Ion Implanter", 25  | •   |   |
|                        |             |   | - Lecture Ma                           | a Assisted Gas Doping", 25a-G-2, 63rd<br>anuscripts, 2002, Niigaka University.                    |   |   |
|                        | •           | by single ion implantation                        | ", 25a-G-3, 63rd A                     | P-Pt type liquid metal ion source for fo<br>applied Physics Lecture Series – Lectu<br>University. | re Manuscripts, 20                        | 002, Niigaka  |
|                        |             |   |  | ey-techniques for co-doping of accepto<br>lcs Lecture Series – Lecture Manuscri                   |   |   |
|                        |             | YAMASHITA, K., et al., "Deve<br>Lec               | lopment of Flash<br>ture Series – Lect | Lamp Annealer for 300mm Wafers", 29<br>ure Manuscripts, 2003, Shinagawa Uni                       | p-ZW-10, 50th App<br>versity.             | plied Physiscs  |
|                        |             | KUBO, Y., et al., "Developme                      | ent of advance sin<br>Lecture Mani     | gle ion implantor", 29p-ZW-11, 50th Apuscripts, 2003, Shinagawa University.                       | pplied Physiscs Le                        | cture Series -  |
|                        |             |   |  | se Doping at Room Temperature" 29p-<br>ure Manuscripts, 2003, Shinagawa Uni                       |   | ed Physiscs   |
|                        |             |   |  | hanlsm of Gas Phase Doping at Room<br>es – Lecture Manuscripts, 2003, Shina                       |   | p-ZW-13, 50th   |
|                        |             |   |  | ination in the Plasma Doping (PD) pro-<br>Lecture Manuscripts, 2003, Shinagawa                    |   | 50th Applied  |
|                        |             |   |  | on Formation by Heat-assisted Exclme<br>eries – Lecture Manuscripts, 2003, Shi                    |   |   |
|                        | 5.0         | EXAMINER  |  | DATE C  | CONSIDERED                                |   |

<sup>\*</sup>EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

1 Applicant's unique citation designation number (optional). 2 Applicant is to place a check mark here if English language Translation is attached.

|                        |             |   |  | I  | Lann                  | STIDDI _  |          |
|------------------------|-------------|---|--|--|-----------------------|---|----------|
| INEO                   |             | TION DISCLOS  | IDE  | ATTY. DOCKET NO. <b>061282-0234</b>  |                       | RIAL NO.  |          |
|                        |             | ENT BY APPLICA  |  | 001202-0204  | ) Se                  | rial No. 10/574,8   | 163      |
| Je g                   |             |   |  | APPLICANT Yuichiro SASAKI, e   | t al.                 |   |          |
|                        | (Sub:       | stitute for form 1449/PTO)                            |  | FILING DATE April 6, 2006  | GR0<br>282            |   |          |
|                        |             | U   | .S. PATENT                                   | DOCUMENTS  |                       |   |          |
| EXAMINER'S<br>INITIALS | CITE<br>NO. | Document Number<br>Number-Kind Code2 (at known)       | Publication Date<br>MM-DD-YYYY               | Name of Patentee or Applicant of<br>Document   | Cited                 | Pages, Columns, Lines<br>Relevant Passages or I<br>Figures Appear | Relevant |
|                        |             | US  |  |  |                       |   |          |
|                        |             | OTHER A   | RT (Including Author                         | , Title, Date, Pertinent Pages, Etc.)  |                       | ^ <u></u>   |          |
| EXAMINER'S<br>INITIALS | CITE<br>NO. |   |  | , title of the article (when appropriate),<br>e(s), volume-issue number(s), publishe   |                       |   |          |
|                        |             | Coincidence Doppler Broa                              | adening Method, Po<br>exes in Si", 1a-A-8, ( | Oxygen Compound Deficits in Si Du<br>psitron Annihilation Coincidence Do<br>64th Applied Physics Lecture Series<br>Fukuoka University. | ppler Bro             | oadening Methods for  |          |
|                        |             |   | iced by noble gas ir                         | ficits in Noble Gas Ion Implanted SI in<br>nplanted Si", 1a-A-9, 64th Applied Pipts, 2003, Fukuoka University.                         |                       |   | _        |
|                        |             | Preprocessing, Effects of s                           | ubstrate surface co                          | rate Surface conditions with Gas Do<br>ondition on gas-phase doping using<br>ries – Lecture Manuscripts, 2003, Fu                      | plasma                | pretreatment", 1a-A-10,   | _        |
|                        |             | ITOH, H., et al., "Ultra-low                          |  | ation In Si II", 30p-ZQ-9, Preprints of<br>Physics, 2006, Ritsumeikan Univers  |                       | Meeting of the Japan  |          |
|                        |             |   |  | ges in Chemical Bondings and Thei<br>eting of the Japan Society of Applie<br>University.   |                       |   |          |
|                        |             |   |  | low Junction Formation by Double-Fig. Japan Society of Applied Physics   |                       |   |          |
|                        |             |   | rints of the 54th Me                         | tic Substrate by Atomic Hydrogen A<br>eting of the Japan Society of Applie<br>Aoyama Gakuin University.                                |                       |   |          |
|                        |             |   | e 54th Meeting of th                         | n Chemical Activity of Defects in Po<br>ne Japan Society of Applied Physics<br>yama Gakuin University.                                 |                       |   |          |
|                        |             | WATANABE, M., et al., "Stu<br>Doping Method", 29p-SM- | -3, Preprints of the                         | oron Depth Profiles and Ultra-Shallov<br>54th Meeting of the Japan Soclety of<br>2007, Aoyama Gakuin University.                       | w P+ Lay<br>f Applied | ers Formed by Plasma<br>I Physics and Related                     |          |
|                        |             | ISHIBA, T., et al., "Lattice Str                      | rains in High Energ                          | y Ion Implated Silicon Subjected to  | Thermal               | Annealings", 27a-SN-13.   |          |
|                        |             | SHIMIZU, N., et al.,                                  | "Secondary Defect                            | Reduction of Multiple MeV Ion Impl   | atation (I            | li)", 27a-SN-14.  |          |
|                        |             |   | Heavy-lon                                    | ion and Amorphization Mechanism<br>Beam Irradiation", 27a-SN-15.   |                       |   |          |
|                        |             | MATSUMOTO, M., "                                      | The Influence of Pr                          | e-oxidation Cleaning on Grotwh of 0  | Oxide Fil             | m (II)", 28a-D-1.   |          |
|                        |             |   |  | ng methods on Dielectric Breakdow  |                       | -   |          |
|                        |             | TAKIYAMA, M., et al.                                  | , " Electrical Chara                         | cteristics of AI MOS Diode Contamir  | nated wit             | h Cu-l", 28a-D-3.   |          |
|                        |             | EXAMINER  |  | DATE   | CONSID                | ERED  |          |

<sup>\*</sup>EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

1 Applicant's unique citation designation number (optional). 2 Applicant is to place a check mark here if English language Translation is attached.

|                        |             | TION DISCLOS                                 |                                | ATTY. DOCKET NO. <b>061282-0234</b>  | 1          | IAL NO.<br>rial No. 10/574,863   |
|------------------------|-------------|--|--------------------------------|--|------------|--|
|                        |             |  |                                | APPLICANT Yuichiro SASAKI, e   | t al.      |  |
|                        | (Sub:       | stitute for form 1449/PTO)                   |                                | FILING DATE April 6, 2006  | GR0<br>282 |  |
|                        |             | U  | J.S. PATENT                    | DOCUMENTS  |            |  |
| EXAMINER'S<br>INITIALS | CITE<br>NO. | Document Number Number-Kind Code2 ((1 known) | Publication Date<br>MM-DD-YYYY | Name of Patentee or Applicant of<br>Document                                       | Cited      | Pages, Columns, Lines, Where<br>Relevant Passages or Relevant<br>Figures Appear  |
|                        |             | US   |                                | <b></b>  |            |  |
|                        |             |  |                                | Title, Date, Pertinent Pages, Etc.)  |            |  |
| EXAMINER'S<br>INITIALS | CITE<br>NO. |  |                                | title of the article (when appropriate),<br>(s), volume-issue number(s), publisher |            |  |
|                        |             | SHIMIZU, N., et al.                          | ., "Secondary Defect           | Reduction of Multiple MeV Ion Impl   | antation   | (III)", 31a-X-5.   |
|                        |             | KIMOTO, K., et                               | al., "Rapid Thermal A          | Annealing for High-energy Ion Impla  | nted Si (  | V)" 31a-X-6.   |
|                        |             |  |                                | Annealing for High-energy Ion Impla  |            |  |
|                        |             | ·  | •                              | hization by si Double Ion Implantati   |            |  |
|                        |             |  |                                | I Effect by Photoacoustic Displacer  |            |  |
|                        |             | SHIMIZU, N., et al., "Effects                | of Junction Leakage            | e Current Reduction of Additional Hi<br>9p-C-14.                                   | gh Ener    | gy Si Ion Implantation",   |
|                        |             | <u> </u>                                     |                                | I202 Cleaning on C-V Characteristic  |            |  |
|                        |             |  |                                | of Silicon Surfaces During Oxidation   |            | The state of the s |
|                        |             |  |                                | of H2SO4 Boiling on Silicon Surfac   |            |  |
|                        |             | 1  |                                | assisted Impurity Doping for ULSIs'  |            |  |
|                        |             |  |                                | trial Processing Induced by Electron   |            |  |
|                        |             | Institute of Electronics,                    | Information and Con            | nt System for VLSI Manufacturing, 1<br>nmunications Engineers, Matsushit           | Electri    | c Industrial Co., Ltd.   |
|                        |             |  |                                | nealing of Ar* Implanted Damage"   |            |  |
|                        |             |  |                                | es of High Energy Boron-Implanted  |            |  |
|                        |             | SHIMIZU, N., et al., "E                      |                                | ormation on Junction Leakage Curre   | ent Using  | g High Energy Ion  |
|                        |             | EXAMINER                                     |                                | DATE (   | CONSID     | ERED   |

<sup>\*</sup>EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

1 Applicant's unique citation designation number (optional). 2 Applicant is to place a check mark here if English language Translation is attached.

|                        |             | TION DISCLO   |                                       | ATTY. DOCKET NO. <b>061282-0234</b>   |                                       | rial No. 10/574,863   | 3        |
|------------------------|-------------|---|---------------------------------------|---|---------------------------------------|---|----------|
|                        |             |   |                                       | APPLICANT Yuichiro SASAKI,  | et al.                                |   |          |
|                        | (Sub:       | stitute for form 1449/PTO                                 | )                                     | FILING DATE April 6, 2006   | GRC<br>282                            |   |          |
|                        |             |   | U.S. PATENT                           | T DOCUMENTS   |                                       |   |          |
| EXAMINER'S<br>INITIALS | CITE<br>NO. | Document Number<br>Number-Kind Code <sub>2 (If know</sub> | Publication Date MM-DD-YYYY           | Name of Patentee or Applicant<br>Document   | of Cited                              | Pages, Columns, Lines, W<br>Relevant Passages or Rele<br>Figures Appear |          |
|                        |             | US  |                                       |   |                                       |   |          |
|                        |             | OTHE  | R ART (Including Autho                | or, Title, Date, Pertinent Pages, Etc.)   |                                       |   |          |
| EXAMINER'S<br>INITIALS | CITE<br>NO. |   |                                       | <ul> <li>s), title of the article (when appropriate<br/>ge(s), volume-issue number(s), publish</li> </ul> |                                       |   |          |
| · · · ·                | $\vdash$    | KINOSHITA, K., et a                                       | al., "Optical Property C              | Change of Silicon in Low Energy Ior   | n Implantat                           | tion (II)", 28a-ZW-8.   |          |
|                        |             | 1   |                                       | ect During the Ion Implantation with  | · · · · · · · · · · · · · · · · · · · | •                                 |          |
|                        |             |   |                                       | arging During Ion Implantation on   |                                       |   |          |
|                        |             | MURAKOSHI, A., et al., "                                  | Formation of Ultra Sh                 | allow Diffusion Layer by Ultra Low<br>10.   | Energy Io                             | n Implantation", 26p-ZN-  |          |
|                        |             |   |                                       | I., "Plasma Doping Method", 26p-Zl  |                                       |   |          |
|                        |             |   |                                       | tra Shallow Junction by Spin-on Gl  |                                       |   |          |
|                        |             | · ·   | •                                     | s Ion Bombardment Damage of Si  |                                       |   |          |
|                        |             |   |                                       | fh concentration Profile for Low En   |                                       |   | <u> </u> |
|                        |             | NAKAMURA, T., et al., "                                   |                                       | eously Implanted As+ ions on diffus<br>nplanted into silicon", 26p-ZP-8.                                  | sivity and a                          | activation efficency of B   |          |
|                        |             | AKIYAMA, H., et al., "The                                 | ilfe-time control tech                | nique for power devices using high<br>P-6.  | n-energy h                            | eavy ion radiation", 28a-   |          |
|                        | 1           | TAKASE, M., et al., "The                                  | indentification of the F              | Region of Ion Implantation Induced  | Physical D                            | Damaged Layer", 28a-P-7.  |          |
|                        |             | <u> </u>  | •                                     | he minority carrier lifetime for the S  |                                       | • •   |          |
|                        |             | 1   | · · · · · · · · · · · · · · · · · · · | emperature Vapor Phase Doping (F  |                                       | •   |          |
|                        |             | 1.  |                                       | oping Applicable to sub-1/4 micron  |                                       |   |          |
|                        |             | KUJIRAI, H., et al., "Ultra                               | a-shallow, low resistar               | nce junction formation by solid-pha<br>28p-P-6.   | ase diffusio                          | on of boron from BSG",  |          |
|                        |             | EXAMINER  | T                                     | DAT   | E CONSID                              | ERED  |          |

<sup>\*</sup>EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

1 Applicant's unique citation designation number (optional). 2 Applicant is to place a check mark here if English language Translation is attached.

|                        |             | TION DISCLOS                                    |  | ATTY. DOCKET NO. 061282-0234  | 1                        | RIAL NO.<br>rial No. 10/574,8                                      | 863      |
|------------------------|-------------|---|--|---|--------------------------|--|----------|
|                        |             |   |  | APPLICANT Yuichiro SASAKI, 6  | et al.                   |  |          |
|                        | (Sub:       | stitute for form 1449/PTO)                      |  | FILING DATE April 6, 2006   | GROUP <b>2823</b>        |  |          |
|                        |             | Ţ   | J.S. PATENT                                    | DOCUMENTS   | -                        |  |          |
| EXAMINER'S<br>INITIALS | CITE<br>NO. | Document Number<br>Number-Kind Code2 (if known) | Publication Date<br>MM-DD-YYYY                 | Name of Patentee or Applicant o<br>Document                                     | Cited                    | Pages, Columns, Lines,<br>Relevant Passages or F<br>Figures Appear | Relevant |
|                        | Ì           | us .  |  |   |                          | <del> </del>   |          |
|                        |             | OTHER A   | ART (Including Author,                         | Title, Date, Pertinent Pages, Etc.)   |                          |  |          |
| EXAMINER'S<br>INITIALS | CITE<br>NO. |   |  | title of the article (when appropriate)<br>(s), volume-issue number(s), publish |                          |  |          |
|                        |             |   |  | by Plasma Emission in Plasma Do   |                          |  |          |
|                        |             |   |  | nallow Junctions by Sb Selective &  |                          |  |          |
|                        |             |   |  | ring Rapid Vapor-phase Doping A   |                          | ·  |          |
|                        |             | TAKASE, M., et al., "Fabric                     |  | Resistance and Shallow Source/Dra<br>Process", 29a-G-2.                         | iin Juncti               | on with Plasma Doping  |          |
|                        |             | SHIMADA, N., et al.,                            | "Shallow Junction, I                           | Formation by Polyatomic Cluster Id  | n Implan                 | tation", 29a-G-3.  |          |
|                        |             | ISHIKAWA, T.,                                   | et al., "Formation of s                        | shallow junctions by low-energy in  | plantatio                | on", 29a-G-4.  |          |
|                        |             |   |  | Formation by Decaborane Ion Imp   |                          |  |          |
|                        | L           |   |  | ormation by 0.2 keV-single B Ion Ir   |                          |  |          |
|                        |             |   |  | ow Source/Drain Junction Fabricat   | •                        | sma Doping", 3a-PC-15.   |          |
|                        | ļ           | ,   |  | he Herzog correction revisited", 7a   |                          |  |          |
|                        |             | 1   |  | neasuring device using a SQUID fo   |                          |  |          |
|                        |             | HARUTAMA, Y., et al., "F                        |  | urement of HeH dissociative recor<br>stron cooler", 7a-YP-10.                   | nbination                | with superconductor  |          |
|                        | İ           |   |  | ns for the resonance states of the  |                          |  |          |
|                        |             | WAKABAYASHI, et al., "IED technique             | M Focusing on high see for practical applica   | speed and low electric power technitions has arrived", IEDM Conferen            | niques , F<br>ice, 1997, | inally the Cu damascene<br>IEEE.                                   |          |
|                        |             | NAKATA, K., et al., "Fai<br>Commu               | l Bit map Correlation<br>nication Engineers (I | Analysis System", The Institute of EICE) Electronics Society Annual I           | Electron<br>Meeting,     | ics, Information and<br>1995.                                      |          |
|                        |             | EXAMINER  |  |   | CONSID                   |  |          |

<sup>\*</sup>EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

1 Applicant's unique citation designation number (optional). 2 Applicant is to place a check mark here if English language Translation is attached.

|                        |             | TION DISCLOSE  |   | ATTY. DOCKET NO. 061282-0234   |                         | RIAL NO.<br>rial No. 10/574,863  | 3 |
|------------------------|-------------|--|---|--|-------------------------|--|---|
|                        |             |  |   | APPLICANT Yuichiro SASAKI,   | et al.                  |  |   |
|                        | (Sub        | stitute for form 1449/PTO)                                 |   | FILING DATE GROUP April 6, 2006 2823   |                         |  |   |
|                        |             | U  | S. PATENT                                   | DOCUMENTS  | 3                       | ·  |   |
| EXAMINER'S<br>INITIALS | CITE<br>NO. | Document Number<br>Number-Kind Code2 (il known)            | Publication Date<br>MM-DD-YYYY              | Name of Patentee or Applicant<br>Document  | of Cited                | Pages, Columns, Lines, Wr<br>Relevant Passages or Rele<br>Figures Appear |   |
|                        |             | OTHER A  | RT (Including Author,                       | Title, Date, Pertinent Pages, Etc.)  | a e i a i               |  |   |
| EXAMINER'S<br>INITIALS | CITE<br>NO. |  |   | , title of the article (when appropriate e(s), volume-issue number(s), publis                      |                         |  |   |
|                        |             | TSUBO, Y., et al., "Diffusion                              | of Phosphorus from                          | n P-doped Polysilicon through Ult<br>ZP-11.  | rathin siO              | 2 into Si Substrate", 30p-   |   |
|                        |             | <u> </u>   |   | on Dioxide in the Presence of Hyd  | _                       |  |   |
|                        |             | TAKASE, M., et al., "Eff                                   |   | ess on boron profile in the plasma   |                         | rocess", 30p-ZP-13.  |   |
|                        |             | TAKASE M et al "Dias                                       |   | "Plasma Doping", Invitational Leo<br>ogy for the MOS transistor with a                             |                         | nath holow 0.15 um"  |   |
|                        |             | TARAGE, III., et al., Tras                                 |   | Physics, 1999, Vol. 68 No. 5.  | Jilailliei ic           | ngui below 0.15 pm ,   |   |
|                        |             | SASAKI, Y., et   | al., "Nondestructive                        | Beam Current Monitor Using DC  | SQUID", p               | ages 68-76.  |   |
|                        |             | KOBAYASHI, K., et al., "Thr<br>the 51st Spring meeting     | of the Japan Societ                         | sma Doping for Beam-Channel Tr<br>ty of Applied Physics and Related<br>iversity of Technology.     | ansistor",<br>Societies | 29p-ZG-13, Preprints of<br>, March 2004, Tokyo                           |   |
|                        |             |  | of the Japan Societ                         | nt on dose of Impurity after plasm<br>ty of Applied Physics and Related<br>iversity of Technology. |                         |  |   |
|                        |             | TAKAGI, K., et al., "Profile of<br>the 51st Spring meeting | of the Japan Societ                         | asma treatment in plasma doping<br>ty of Applied Physics and Related<br>iversity of Technology.    | method",<br>Societies   | 29p-ZG-15, Preprints of<br>, March 2004, Tokyo                           |   |
|                        |             |  |   | hization for Shallow Junction Forn<br>Physics and Related Societies, S<br>University.              |                         |  |   |
|                        |             |  | ting of the Japan So                        | oron/Phosphorus Layer by Cold/H<br>ociety of Applied Physics and Rela<br>oku Gakuin University.    |                         |  |   |
|                        |             |  |   | tion for Three-Dimensional Transi<br>Physics and Related Societies, S<br>University.               |                         |  |   |
|                        |             | OTAKAGI, K., et al., "Effect Japan Society of Appli        | ct on Impurity profile<br>ed Physics Sympos | e of Helium Plasma Treatment on<br>ium Collection of Lectures, Septe<br>Department.                | a Plasma<br>mber 2004   | Doping Method", 65th<br>I, Tohoku Graduate                               |   |
|                        |             |  |   | esa-type p+/n, Junctions Formed apan Society of Applied Physics,                                   |                         |  |   |
|                        |             | PerPreprints of the 66                                     | ith Meeting of the Ja                       | of ultra-Shallow p+ Layers Forme<br>apan Society of Applied Physics, 2                             | 005, Toku               | shima University.  |   |
|                        |             |  |   | Atoms Implanted In A Silicon Sur<br>apan Society of Applied Physics, 2                             |                         |  |   |
|                        |             | EXAMINER   |   | DAT  | E CONSID                | ERED   |   |

<sup>\*</sup>EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

1 Applicant's unique citation designation number (optional). 2 Applicant is to place a check mark here if English language Translation is attached.

|                        |              |   |   |   | STILLI 12  | <u> </u> |
|------------------------|--------------|---|---|---|--|----------|
|                        |              | TION DISCLOSENT BY APPLICA                                |   | ATTY. DOCKET NO.<br>061282-0234   | SERIAL NO. Serial No. 10/574,86  | 63       |
|                        |              |   |   | APPLICANT   |  |          |
|                        |              |   |   | Yuichiro SASAKI, et   | · al   |          |
|                        |              |   |   |   | 1  |          |
|                        | (Sub:        | stitute for form 1449/PTO)                                |   | FILING DATE   | GROUP  |          |
|                        |              |   |   | April 6, 2006   | 2823   |          |
|                        |              | U   | J.S. PATENT                               | DOCUMENTS   |  |          |
| EXAMINER'S<br>INITIALS | CITE<br>NO.  | Document Number<br>Number-Kind Code2 (# known)            | Publication Date<br>MM-DD-YYYY            | Name of Patentee or Applicant of C<br>Document  | ited Pages, Columns, Lines, N<br>Relevant Passages or Re<br>Figures Appear |          |
|                        |              |   |   | Title, Date, Pertinent Pages, Etc.)   |  |          |
| EXAMINER'S<br>INITIALS | CITE<br>NO.  |   |   | , title of the article (when appropriate), ti<br>e(s), volume-issue number(s), publisher,                           |  |          |
|                        |              | 169, Basic Researc  | h Lab., Semiconduc                        | in Si layer on buried oxide by implantor Research Center, Matsushita Elec   | tric industrial Co., Ltd.  |          |
|                        |              |   | Research Lab., N                          | OM 88-95, Semiconductor Research C<br>latsushita Electric industrial Co., Ltd                                       |  |          |
|                        |              |   |   | ma Doping", Electronic Material, Dec  |  |          |
|                        | <u> </u>     |   | <u> </u>                                  | niconductor Research Center, Matsus   |  |          |
| ,                      |              |   | of Electronic i                           | nroom Auto Control System", 1994 S<br>Information and Communications.   |  |          |
|                        | <b> </b>     |   |   | s Near the Surface - Outer Diffusion  |  |          |
|                        | <del> </del> |   | <u> </u>                                  | xidation of Nitrogen Introduced by lo<br>s on Boron Enhanced Diffusion and C  |  |          |
|                        | <u> </u>     |   | In  | nplantation", 28p-ZL3.  |  |          |
| <del>_</del>           | <u> </u>     |   |   | 11.   |  |          |
|                        |              |   | •   | ciation with Crystalline Damage due (<br>(IV)", 20p-ZE-12.  |  |          |
|                        | <b> </b>     |   |   | Species (B, As) Implantation in Silicon   |  |          |
|                        |              | HF treatment before and aft                               | ter plasma doping",<br>200                | Cleansing Before and After Plasma I<br>1a-A-11, 64th Applied Physics Lectur<br>33, Fukuoka University.              | e Series- Lecture Manuscripts,   |          |
|                        |              | Polycrystalline silicon"                                  | , 1p-A-1, 64th Applie                     | ation in Polycrystalline SI, High tilt an<br>ad Physics Lecture Series- Lecture M<br>University.                    | anuscripts, 2003, Fukuoka  |          |
|                        |              | YAMADA, M., et al., "Evalu<br>leakage currents induced by | by the stress of shall                    | eak Current Caused by Element Isola<br>low trench isolation", 1p-A-2, 64th Ag<br>scripts, 2003, Fukuoka University. | tion Stress, Study of junction oplied Physics Lecture Series-              |          |
|                        |              | AIBA, I., et al., "Dose Variati<br>of Applied Physics Sy  | ion by Chemical Cle<br>mposium Collection | aning Process after Plasma Doping",<br>n of Lectures, September 2004, Tohol   | 3p-P10-18, 65th Japan Society ku Graduate Department.                      |          |
|                        |              | 65th Japan Society of Ap                                  | plied Physics Symp                        | ultra Shallow p*n Junctions formed losium Collection of Lectures, Septem<br>Department.                             | nber 2004, Tohoku Graduate   |          |
|                        |              |   | E-7, 52nd Japan Soc                       | ale Silicon Substrate by using hybrid<br>lety of Applied Physics Symposium<br>Saltama University.                   |  |          |
|                        |              | 52nd Japan Society  | of Applied Physics S                      | orphous layer formation process by F<br>Symposium Collection of Lectures, 20  | 005, Saitama University.   |          |
|                        |              |   |   | tes with Resist Patterns", 1a-YE-9, 52<br>lection of Lectures, 2005, Saltama Un                                     |  |          |
|                        |              | EXAMINER  |   | DATE C  | ONSIDERED  |          |
|                        |              |   |   |   |  |          |

<sup>\*</sup>EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

1 Applicant's unique citation designation number (optional). 2 Applicant is to place a check mark here if English language Translation is attached.

| INFORMATION DISCLOSURE<br>STATEMENT BY APPLICANT   |  |   |                                | ATTY. DOCKET NO.<br>061282-0234   |                   | SERIAL NO. Serial No. 10/574,863  |  |
|--|--|---|--------------------------------|-----------------------------------|-------------------|---|--|
| (Substitute for form 1449/PTO)   |  |   |                                | APPLICANT Yuichiro SASAKI, et al. |                   |   |  |
|  |  |   |                                | FILING DATE April 6, 2006         | GROUP <b>2823</b> |   |  |
| U.S. PATENT DOCUMENTS  |  |   |                                |                                   |                   |   |  |
| EXAMINER'S<br>INITIALS   | CITE<br>NO.  | Document Number<br>Number-Kind Code2 (if known)   | Publication Date<br>MM-DD-YYYY | Document Relevant Passages o      |                   | Pages, Columns, Lines, Where<br>Relevant Passages or Relevant<br>Figures Appear |  |
| OTHER ART (Including Author, Title, Date, Pertinent Pages, Etc.)   |  |   |                                |                                   |                   |   |  |
| EXAMINER'S<br>INITIALS   | CITE<br>NO.  | Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published. |                                |                                   |                   |   |  |
|  |  | OKASHITE, K., et al., "Ultra Shallow Junction Formation with Plasma Doping and Spike RTA", 1a-YE-10, 52nd Japan Society of Applied Physics Symposium Collection of Lectures, 2005, Saltama University.  |                                |                                   |                   |   |  |
|  |  | SAUDDIN, H., "Leakage Current Characteristics of Ultra-shallow p+/n Junctions Formed by Plasma Doping", 1a-YE-<br>11, 52nd Japan Society of Applied Physics Symposium Collection of Lectures, 2005, Saitama University.   |                                |                                   |                   |   |  |
|  |  | MATSUNO, A., et al., "One Dimensional Thermal Diffusion Simulation for the USJ formation by green laser anneal with absorption layer", 16-YE-1, 52nd Japan Society of Applied Physics Symposium Collection of Lectures, 2005, Saitama University.               |                                |                                   |                   |   |  |
|  | MIZUNO, B., et al., "ECR Plasma Doping", Matsushita Electric Industrial Co., Ltd.                  |   |                                |                                   |                   |   |  |
|  | HIGAKI, R., et al., "Effects of gas phase absorption into SI substrates on plasma doping process". |   |                                |                                   |                   |   |  |
| LENOBLE, D., et al., "Fabrication of 60-nm plasma doped CMOS transistors", 2002, IEEE.   |  |   |                                |                                   |                   |   |  |
| SEVERI, S., et al., "Diffusion-less junctions and super halo profiles for PMOS transistors formed by SPER and FUSI gate in 45nm physical gate length devices", 2004, IEEE. |  |   |                                |                                   |                   |   |  |
| EXAMINER   |  |   |                                | DATE CONSIDERED                   |                   |   |  |

<sup>\*</sup>EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

1 Applicant's unique citation designation number (optional). 2 Applicant is to place a check mark here if English language Translation is attached.